

R. S. Yates

A

TREATISE

ON THE

ART OF DECYPHERING,

AND OF

WRITING IN CYPHER.

WITH AN

HARMONIC ALPHABET.

L O N D O N :

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M D C C L X X I I .

THE ATLAS

OF THE

UNITED STATES

AND TERRITORIES

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TO THE RIGHT HONOURABLE
Lord Viscount BATEMAN,
BARON of CULMORE,

Master of the Buck Hounds, and one of his
Majesty's most Honourable Privy Council.

My LORD,

THOUGH the following sheets contain nothing of *my own*, which may prove worthy of your Lordship's notice; yet, there are some contrivances of other men, which want nothing of ingenuity to recommend them. I therefore beg leave

a

to

DEDICATION.

to inscribe this Treatise to
your Lordship, in grateful
acknowledgement of the
many favours you have con-
ferred upon me, during the
course of the many years I
have had the honor to be

Your LORDSHIP'S

Most obedient

and devoted

humble servant,

PHILIP THICKNESSE.

*Quoitca, Monmouthshire,
May 29, 1772.*

THE candid reader is desired to correct the many literal, as well as greater errors, he will find in the following sheets. The Author could urge many reasons to intitle him to some indulgence on that score, beside the great distance of his abode from the press; nor has he affixed the high price of the performance, from any idea of its worth or merit, but for reasons of a less selfish nature.

PREFACE

P R E F A C E.

IT may justly be remarked, that many of the most essential Discoveries, made by the earlier Ages; and which we at this Day reap the benefit of, are enjoyed by Millions, who never consider the Inconvenience and difficulties, they would be exposed to without them. Men write to their absent Friends from their Chimney Corner, receive their Answers in the same Place, hear Men speak who have been dead a thousand Years, and leave their own Sentiments recorded, for those who are to live a thousand Years hence, as if it were nothing to be wondered at! The Frequency, and the easy Attainment of

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Reading and Writing, has almost worn out of the mind of man, how wonderful the contrivance is.

THE *Romans*, amidst all their Arts, were destitute of the greatest of modern Conveniences, which we enjoy almost without perceiving it. We have Windows and Glass Doors which let in the Air, and the Light, at the same Time that they shut out, the Injuries and Inconveniences which attend them, and exhibit to us, even in the interior Parts of our House, the variegated View of Nature, which transform the Winds, the Frosts, and the Tempests, into a magnificent moving Picture before our Eyes. The Peasant, in these our Days, is thought miserable, who wants a Luxury which a *Roman* Emperor was a Stranger to ! The Invention of Letters, and the Art of Printing, duely considered, seem to have had something more than human in it.

Who the Authors of these rare Inventions were is uncertain, but it is most likely,

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likely, the hint was taken from the *Egyptian Hieroglyphics*, and yet how poor was that Method of conveying their Sentiments? for though we cannot, at this distance of Time, decypher those Monuments of Antiquity perfectly; yet, by what we do know, it is very evident, that method was vague, confined, uncertain, and incapable of conveying historical Events. *Plutarch* says, there was a Temple in *Egypt* dedicated to *Minerva*, on the Front of which was painted, an Infant, an old Man, a Hawk, a Fish, and a Sea-Horse. The Meaning of which, he says, is, “ YOUNG and OLD know GOD hates Impudence.” But the true meaning may be this; The Infant, which is the first Figure, represents Man’s first Entrance into the World; and the old Man implies the going out of it: The Falcon, GOD; the Fish, Hatred, because they hated Fish bred in the Sea, which symbolized *Typhon*; and by the River-horse, Murder, Impudence, Violence, and

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and Injustice; for they say he killeth his Sire, and ravisheth his own Dam, which may import, *O you that enter the World, and go out of it, know, that God hateth Injustice!* and yet neither may be any thing to the purpose, as it cannot but be very difficult for Men at this Day, to explain certainly; what many Men of their own Time and Nation, must have differed in the Sense of.

AFTER the Invention of Letters were thoroughly known, and used by the Learned of all Nations, it is natural to conclude, that particular Men, to serve private purposes, would contrive some secret Manner of corresponding, by which they hoped to carry on Plots undiscovered, or to give Intelligence either to, or from a City besieged. And it was for many Ages believed, that such a correspondence might be carried on by Confederates, inexplicable to any other Persons; but such is the Craft of Man! that it is scarce possible for a Letter in Cypher to be written, so as not to be
be

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be decyphered, without any Clue, but a close application to the Letter itself; and that too, though it were writ in a Language, the Decypherer does not understand.

A distant Relation of mine, of the Name of *Blencowe*, was the first Man who had a fixed Salary from Government as DECYPHERER. And as the manner he got it, would do Honour to the Memory of the Minister who gave it him, I am sorry the Minister's Name, as well as the Fact, is out of mine; but upon my Relation hearing that such an employment, with a fixed Salary annexed to it, was to be settled; he repaired unknown, and unrecommended, to the *then* Secretary of State, and asked it. The Secretary seeing a Stranger, and hearing a request so contrary to the usual *Etiquette* of such business, asked him what his pretensions were to the employment he required? because, Sir, said he, I am *qualified* for that which I ask. Are you, replied the Minister

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Minister; then decypher theſe two letters; letters which had lain ſome Time before him unexplained, for want of ſuch a Perſon; and which, perhaps, occaſioned the reſolution of having an eſta- bliſhed Decypherer. In a few days the Letters were brought to the Miniſter, properly and evidently explained, and my Relation thereupon had the Ap- pointment. And though this Matter of Decyphering, as well as writing in Cypher, is now very commonly practiſed, yet, I have met with ſome Men, even of Senſe and Learning, who have doubted the poſſibility of decyphering a Letter ſo written; and rather think the decypherers make out ſomething plauſible; and not being eaſily detected, paſs themſelves off as Men who poſſeſs an Art, not to be ac- quired. In the following ſheets it ſhall be my endeavour, not only to ſhew the poſſibility of it, but even to enable thoſe very Men who doubt it, or any Man of common capacity, to read a letter, written in Cypher, in a few hours:

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hours; nay, perhaps, in a few minutes, though the Epistle be composed of four-and-twenty arbitrary Characters, made by the Writer, which the Reader had never seen before; and though this be the easiest Method of writing in Cypher, and consequently the readiest to be explained, yet it is what a Man of good sense, who has never considered the Matter attentively, will at first think very difficult; but in a few hours consideration, be as much surprised as pleased, at the unfolding of this seemingly occult Art. I have not the vanity to think myself capable of instructing those who already practise this Art, but of leading those who doubt it, or who may find a rational Exercise for the mind (and particularly young people) into an habitude of thinking; for it cannot be doubted, but that any one Rule laid down, for a methodical Way of thinking, on any one Subject, will enable the mind, to employ itself afterwards, much better, on all other Occasions; and therefore,

*** P R E F A C E.**

therefore, I would recommend this Kind of Study to very young Gentlemen, as an entertaining, edifying, and innocent Amusement at present; and of more Importance to their riper Years, than they are aware of. If it be objected, that bad uses may be made by a knowledge of the Art of writing in Cypher, I answer, so may writing without; a man who cannot write, cannot commit a Forgery; but if he is disposed to be dishonest, he may break open a House.

A
T R E A T I S E
O N T H E

Art of Decyphering, &c.

IN order to write with secrecy and safety in Cypher, the first care must be to avoid suspicion; the next, that it be difficult to decypher if suspected; and lastly, that it be so contrived, as to be fit for dispatch, and the sense easily made out, by those who are entrusted with the key. And if such a method can be contrived, to write secretly with all these advantages, and yet be so cunningly done, as to elude the Decypherer's art, it may then be justly considered an ingenious contrivance, whereby the most dangerous correspondence may be carried on by wicked-disposed people; or
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the most safe, useful, and necessary intelligence, may be sent from foreign Embassadors and Generals to their own country; as well as the private instructions of their Princes to them, without a possibility of being discovered, tho' the messenger (*which is often the case*) should be murdered on the road, and his dispatches taken, for that purpose. However, to avoid suspicion, is a very essential consideration; for when an intercepted letter is so writ as not to be intelligible; yet, it explains itself so far, as to inform the interceptor, that it conceals *something*, which his curiosity alone urges him to discover; and when that is set about in good earnest, if the writer has been guilty of treason or murder, he will be in great danger of meeting with his just reward; for there is scarce any thing writ in Cypher, however ingeniously contrived, which in these days, can lie long hidden for want of a Decypherer, tho' perhaps there are too few who have made this their study.

EVERY

EVERY thing which comes from a *suspected* hand, should be carefully examined, for a very wicked design may be conveyed in a letter, which, at first reading, may seem an innocent epistle, from one friend to another; and yet, upon a closer examination, may appear to have an hidden meaning, of the most evil tendency. How far it may be right or wrong to publish a treatise on this art, I am neither able, nor in a *situation*, to determine; but what has encouraged me to believe it will be of use, is, that the great Lord Bacon, in his ADVANCEMENT OF LEARNING, complains, that the art of Decyphering is wanting; and has himself given one of the most ingenious methods of writing in cypher, and the most difficult to be decyphered, of any yet contrived. His authority, therefore, justifies this my feeble attempt, wherein I shall not only mention those several methods of secret writing practised in former ages, as well as the latter, but also point out some rules to be observed, in
order

order to decypher them ; which, if carefully attended to, will enable any person, of common capacity, to read a letter in a very short time writ in common cypher.

THE *Abbot Trithemeus*, in recommendation of his *Polygraphy*, asserts, that he who understands his mother tongue only, may, by the knowledge of this art, come at the sense of an epistle writ in Latin ; and though that is not strictly true, yet it is certain, that a man who understands no other language than English, may be able to reduce a letter, writ in Latin Cypher, into proper order by being well acquainted with the rules of Decyphering ; and when that is done, it will prove a very powerful excitement to the Decypherer, to know the meaning of those letters and words he has been at such pains to dredge from their obscurity. It may be said, that this art should be known, and practised only by Officers of State, or the Generals who command an army ; but may not a private centinel save an army, or a city, by decyphering
in

an intercepted letter? Great undertakings require sudden action; and if cypher is to be carried first to the General, and then to a Secretary of State, before it can be understood, the design may, and will, most likely, *discover itself first*, by an effectual, and perhaps fatal, execution. Those who have treated on this subject, even so lately as within an hundred or an hundred and thirty years, have imputed *witchcraft* to belong to this art! Thanks to the power and wisdom of an English Parliament, who have driven all those *evil doers*, either into the *Orkneys*, or confined them among the highlands in Scotland, or the mountains in Wales; for though I live among the latter, I am under no apprehension of being carried to the *Trying-pool*; yet I lately saw a *conjuring book* at Abergavenny, in the possession of a bookseller, which could not be worth one penny, but for which he asked a guinea and a half, and declared he gave twenty-seven shillings for it! at
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the request of a tradesman who wanted to know *who stole* his working tools; and a worthy clergyman, in my neighbourhood, was lately under strong apprehensions of being ruined, for having read the burial service over a poor harmless, inoffensive old woman, some who either do, or who ought to know better (but whom he knew to be his enemies) had made many enquiries about the deceased; and whether there was not, upon some part of her body, a *tet* whereby she gave nourishment to her *familiar*. That such absurd notions should remain amongst the lowest dregs of the people in every country, is not to be wondered at; but that Magistrates, and men of rank and education, should give ear to such idle tales, is a mortifying reflection, as it may tend to many great and unforeseen mischiefs, if the common people's suspicions have the least encouragement from those they think wiser than themselves, and they always take

riches

riches for wisdom. There is no saying that the first old woman they meet, muttering to herself, which is a common and natural infirmity attending age, poverty, and living alone, may not die, the most violent, and dreadful of all deaths! *i. e.* by the hands of an enraged, or superstitious rabble.

THAT the art of secret writing, or of secret information, is of great antiquity, is very certain; of what antiquity, is not very material now to enquire: however, those who have leisure, and learning sufficient, may see what *Polybius* has cited, from ancient authors, who quotes *Æneas*, *Cleomenes*, and *Democritus*: beside these, as Bishop Wilkins observes, *Julius Africanus*, and *Philo-Mechanicus*, two ancient Grecians, have also treated of this subject; and the military significations, in use among the Romans, are mentioned by *Vegetius* and *Frontinus*: there is likewise a volume writ upon the same subject, by *Janus Gruterus*, commonly thought to be the work of *Cicero* and *Seneca*. But in latter times are the *Abbot Trithemius*,

Baptista Porta, Isaac Causaban, Selenus, Vossius, and many others, in various languages; and among the rest, the immortal Lord Bacon, in his work, so justly called, the *Advancement of Learning*, has thought it a matter worthy of his serious attention. It will be quite sufficient for the purpose, to commence this enquiry, by examining the secret use made of the *Lacedæmonian Scytale*, said to be the invention of *Archimedes*.

For this purpose there were provided two round staves, equal in length and size; one of which was left in the custody of the magistrates; and the other was taken by the General, who commanded abroad: so when the Magistrates had any private instructions to send the General, or the General any secret information to convey to the Magistrates, the method was, to wrap a narrow piece of parchment round the staff, in a serpentine revolution, so that the edges might meet close together; and then write their letters upon both the edges,
half

half the character on each side; and thus, when the parchment was unrolled, there appeared nothing but imperfect pieces of letters, but which were easily put together upon a staff of the same size, and read by the confederate party: but notwithstanding the seeming difficulty of reading a scrole, so writ, without the stave, there are many ways by which it might be made out, as *Scaliger* in a few words clearly demonstrates, for says he, only twist the paper, or parchment, so that both pieces of the first divided letter may be joined, and that will give the true circumference of the *scytale* to frame another by; but I wonder *Scaliger* did not think of a much more ready method, and that is, by cutting the scrole quite through the middle between the half letters, and then, by applying the two broken edges of the letters together, on a table, the letters will appear perfect, and consequently the reading be exposed. JULIUS CÆSAR's method was, to take the *d* for the *a*, and the *e* for *b*, and thus

changing the order of the alphabet, rendered his epistles, as he thought, inexplicable to all, but those to whom he intrusted the key. AUGUSTUS CÆSAR put *b* for *a*, *c* for *b*, and two *xx*'s for *a*.—By the first method the words JULIUS CÆSAR would appear thus:

my h my w f h w d u
J u l i u s C e s a r

By this it appears, that the least alteration of the alphabet, will render the well known use of the letters, in their proper order, quite as uncouth; nay, rather perplex a young decypherer more than any new invented alphabet of arbitrary characters; because the examiner will not readily divest his mind of the proper power of the letters he so well knows the use of. In the plate annexed I have given a specimen of a sentence lately sent me, composed of arbitrary characters, and which I should have read in less time than they were writ, had not the last letter, of the last word but one, been wrong, which should be two strait lines

lines instead of one, as the second letter of the second word, is,

AND this it was which rendered it difficult to make out the sense, even after I had got most of the words complete. Now whoever will sit down, and consider seriously the above characters, (I mean one who has never before made any enquiry into this matter) will, in half an hour's time, however he may be persuaded at first sight of the difficulty of reading it, be agreeably convinced to the contrary: observing, that the last letter of the last word but one is wrong, but I chose to give it, as I received it; not that there is any peculiar art used either in the sense or in the composition of the characters, but as it will shew the justness of the following remarks:---First, then, observe, that the *fair maker* of this alphabet (for it was done by a lady of rank) or the maker of any other, who has not *well* considered the matter, will naturally begin with a character to represent *a*, and so on down to *z*; therefore the Decypherer must avail himself of this

advan-

advantage, among many others, and conclude, that those letters which are most simple, are nearest the beginning of the alphabet; and consequently, that those which are made up of many strokes, and most complicated, are towards the latter end, because as the *maker* proceeds, his invention must go to work, and instead, perhaps, of one stroke, to represent a letter, he must unite two or three: this is an observation I have often made, and have scarce ever seen a new *invented* alphabet that had not this *weakness* in its composition; and the specimen here annexed, is a strong confirmation of it. However, as an expert practitioner in this art, would most likely *take the staff by the other end*, it will be necessary to be apprised of it. The next thing to observe is, what letters occur ofteneft, and those you may conclude are vowels, and that which is most frequent, to be an *e*---as *e* in English occurs oftener than any other letter. Where you find characters doubled in the beginning of a word, it
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will be necessary to consider whether it be not some Welch word as *Lloyd*, *Llandaff*, or *Aaron*, *Eel*, *Filt*, *Vulture*, &c. In a word of three letters, beginning and ending in the same characters, some vowel is probably between, as *did*, or *'e're*; but *e* is easily discovered; and that one letter being obtained, is of infinite consequence towards recovering with it the other twenty-three.

In English, the *e* is continually employed, as in *see*, *be*, *ever*, *speed*, *need*, *deference*, *excel*, *excess*, &c. though this will not hold good in Latin, as *e*, and *i*, are equally frequent in the latter, and next to these, *a*, and *u*; but *o*, not so frequent as any of them. When you meet with a character doubled, in the middle of a word of four letters, as you will perceive it to be in the above cypher, it will be necessary to consider what words of four letters are so spelt. It is probable the vowels *e* or *o*, are these; as *meet*, *feel*, *good*, *book*, *look*, &c. In polysyllables, where a double character

ap-

appears in the middle of a word, it is for the most part a consonant; and if so, the preceding letter is always a vowel. In confidence, therefore, that the easy cypher here given, will be soon disclosed, by any person who will bestow half an hour's consideration upon it, I shall leave it to *speak for itself*, and not tempt an impatient scholar to turn to the solution, or to apply *to the Lord Mayor of London*, for the sense of it.

OBSERVE also, that *i*, in English, never terminates a word, nor *a* or *u* except in *sea*, *you*, or *those*, and thus by comparing the frequency of the letters, you will generally find *e* occur the ofteneft: next, *o*, then *a*, and *i*; but *u*, and *y*, are not so often used as some of the consonants. Among the vowels, *e* and *o* are often doubled; the rest scarce ever: and *e*, and *y*, often terminate words, but *y* is less frequent, and consequently easily distinguished.

To find out one consonant from another, you must also observe their frequency,

quency, *d, h, n, r, s, t*, and next to those, *c, f, g, l, m, w*, in a third rank may be placed; *b, k, p*, and lastly *q, x, z*. This remark, however, belongs to English; for in Latin the consonants are *l, r, s, t*; next, *c, f, m, n*; then, *d, g, h, p, q*; and lastly, *b, x, z*. But the first difficulty is to come at the knowledge of three or four letters, therefore where a word of four letters hath the first and fourth the same, it is most likely to be *that*; to prove which look for another of four letters, beginning with the two first, and ending with two others, and it will probably prove to be *this*; and more especially if you find another with three letters, beginning with the first two, for in that case it must be *the*; now having found out in any part of the Cypher these three words (*that*) (*this*) and (*the*) place them over the characters which you know to be *t, h, a, i, f, e*, and then consider what letters are deficient, and what the words, from the number of letters which compose them, are most

most likely to be; and you will find such ready and surprising intimation from the above six *deserters* you have apprehended, that you will soon be in possession of the whole battalion. Where words of two letters appear of the same characters, differently placed, it is most likely one is *o n*, the the other *n o*, so *o f*, and *f o r*, and *from*, discover and convict each other; and *t h* are very often used in the beginning of English words, as, *the, that, this, them, these, their, thrust, thwart, &c. &c.*

CHAPTER II.

THE Earl of *Argyle's* method of confounding the sense of his letter by altering the place of the words, was at that time thought inexplicable; and I have seen many methods laid down to explain it; but the readiest way is to mark the concurrence of PROPER words,

I have not the grounds our friends have
 gone upon which hath as I do occasioned them to offer
 so little money as they do I hear neither know
 I what assistance they know do I intend to will give
 and 'till I I do so much as
 refuse my service nor is resolved 'till I
 object against any thing is red or any other
 first hear what Mr. say only let you know as
 you send shall resolve to grounds I in this
 time I resolve to let in distance and in proposition mention
 much of the is possible at truly in my thought could do
 is way I did from I half of what I
 the very least business effectually not I
 our business effectually not half of what I
 would have thought requisite in an other juncture, &c.

WHEN *Argyle* had writ a letter thus,
 of which the above is a part of one, he
 filled up the spaces with any words
 which occurred, and then it appeared
 thus:

*I gone so I and refuse object first you
time much is way the our would have busi-
ness very I possible of I send here against my
'till what little upon KNOW NOT which
money assistance I service any what shall re-
solve THE at did least effectually thought
requisite not sum truly this GROUNDS to say
Mr. thing nor know they as hath grounds
occasioned I do both do is red only let I dis-
tance in I half in an of thought my and go
you in or resolved so I intend he or them
OUR FRIENDS, &c. &c. &c.*

Now as I observed above, mark but the concurrence of proper words, and especially if they be at equal distances (and so his letter is writ) then the number of words between these is the column; and thus the business is done; there may indeed be a proper coincidence by chance, but if you lay hold of such only as are equidistant; they must develope the matter where the writer goes down one column and up another. And this is a much readier and certain method, than that laid down by *Falconer*.

THE

THE immortal Lord *Bacon*, the greatest man *Britain*, or perhaps any other nation, ever produced, has given us a secret way of correspondence, and to divert suspicion, by inserting of nulls; he says, "As for the shifting of examination, there is ready prepared a new and profitable invention to this purpose, which seeing it is easily procured, to what end should we report it as deficient? The invention is this: that you have two sets of alphabets, one of true letters, the other of non-significants; and that you likewise fold up two letters, one of which may carry the secret, another, such as is probable the writer might send, yet without peril: now if the messenger be strictly examined concerning the Cypher, let him present the alphabet of non-significants, for true letters; but the alphabet of true letters for non-significants: by this art, the examiner, falling upon the exterior letter, and finding it probable, shall suspect nothing of the interior letter.

THE

THE publication of this art, in some measure defeated the use of it, but yet, without any alphabet, such writing is decypherable, for if two alphabets are used, the number of characters will shew it.

Trithemius, in his letters to *Arnoldus Bosticus*, mentions so many extraordinary methods of secret information, that Frederick the 2d Prince Palatine, caused his original M. S. to be burnt, and lucky it was, in *those days*, that the author did not burn with them; and yet, those wonderful proposals *Trithemius* astonished the world with might be performed without any of *those supernatural assistances* he was supposed to command. He informs *Bosticus* that his first book contains more than an hundred ways of secret writing, without suspicion, and without any transposition of the letters; and that no man by human industry, can know, or even suspect, the enveloped meaning of his letters, without being taught the art by

by him. Notwithstanding these bold assertions, I am convinced that an ordinary capacity in these days, who had a little considered the matter, would soon have convinced him of his error. Uncouth hard words were chiefly what he used to disguise his meaning: indeed he also asserted, that he could convey information by fire to any one instructed in his art, at an hundred miles distance; and *that part* of his art might, in the opinion of the Prince Palatine, be considered more wonderful than any, and determine him to burn his books of *witchcraft*. Yet, in war time, this manner of correspondence, is practised every night by the Spaniards at St. Roak (a high situation near Gibraltar) to inform the Governor of *Cadiz*, not only of the number of men of war lying at anchor in the bay of Gibraltar, but what number have sailed either out of the bay, up the Mediterranean, or out of the Streights mouth. I believe, indeed, they went no farther than this; but they might, by
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the same rule, have informed the Governor of Cadiz, that General Hargrave was more intent on getting money, than on defeating their intelligence; for had the General caused the same sort of lights to have been exhibited from the signal house on the top of Gibraltar hill, at the same time that the Spaniards shewed theirs, their method would have been utterly disconcerted: and yet astonishing to believe it! this has been a constant UNINTERRUPTED practice of the Spaniards, during every war, since the English have been in possession of that important place! Indeed the Governor may say, *What have I to do with the number of ships in the bay, or with marine affairs?* and it is more than probable that an Admiral, who commands a fleet there, might quarrel with the Governor for *meddling with his department!* and yet poor ENGLAND abounds with such Generals, and such Admirals too. But had *Marshal Saxe*, or Lord George Germaine, been Governor of Gibraltar at those times, I am
con-

convinced the Spaniards at Cadiz would have had no information from St. Roak, but what was conveyed by an ordinary messenger, or by express. They are so aware of being defeated, by shewing the SAME number of lights, as there are King's ships in the bay, that there is no forming any judgement by that; but by taking down constantly every night, for some weeks together, the lights they did shew, and the distance of time between each light, or lights, I was convinced they thereby represented the alphabet, and that they conveyed their information by *letters of fire*: indeed I had in some measure acquired their method, but not understanding Spanish, and fearing a *court martial* and a *Cashierment*, if I had informed the Governor of my discovery, I have reserved it to this hour of safety, being, thank God, out of the reach of every species of ignorance and incapacity, but that of my own; for I do insist upon it, that a Governor so ignorant or indolent as not to defeat such a kind of correspondence,

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pondence, would be wicked, or foolish enough, to punish any officer who presumed *to dictate to him!*

THE *Spaniards* by those lights not only expressed letters, but figures also; so when they *only* meant to specify the number of men of war in the bay, two lights might signify the No. X, four XX, &c. The sailing of the whole fleet out of the straits mouth, might be shewn by one continued fire burning, as I have often seen it, for some time together; and up the *Mediterranean*, by two fires: yet every information of this kind may be defeated, and even false alarms given to the *Spaniards* at *Cadiz*, by a Governor, who would take half the trouble to serve his country, which he does to enrich himself, and distress those under his command; for the worst civil government, is infinitely superior, to most called military. I have known a Governor of *Gibraltar*, send a *Genoese* in war time over to the *Spanish* side, to buy him some potatoes, which the *Spaniards* had taken in
an

an *Irish* vessel, and hang the poor *Genoese*, without trial, when he returned, for a crime the man could not have been guilty of, had not the Governor, by sending him there, led him into it. After having explained this matter, and shewn how easily the *Spaniards* may, for the future, be disconcerted in this particular instance, I am afraid I have done them an essential piece of service; for tho' I can easily suppose that 'e're long General Elliot may become the Governor of *Gibraltar*; yet I am convinced he is *too wise*, and *too great a man*, to regard what I may say upon this, as little, as what I have said to him, upon a former occasion.

Trithemius goes further in the art of secret information, than any other has yet pretended to; for he asserts he can convey his sentiments at pleasure; to a close prisoner three miles under ground, tho' he be kept in the strictest custody.

Schottus, and many others, have employed much unnecessary time to discover

by what means such information could be conveyed to a man under ground! but if it can be done, it must be effected by certain sounds made *in*, or *upon*, the earth above; but it is most likely his words are *enigmatically* proposed, and therefore allowance must be given for that; indeed it is likely, *Trithemius* might think it practicable by magnetic powers; for it has been said, that two needles touched by the same loadstone, and moving like the mariner's compass in a circle, wherein the letters of the alphabet are described, would sympathise with each other, at however great a distance they were; but this, *Schottus*, and other naturalists, have clearly demonstrated, to be impracticable at a greater distance, than a few feet asunder.

THE first and chief art of secret intimation in these days, is, to prevent suspicion, as scarce any kind of correspondence can be carried on by cypher, but what may be unfolded without the key: a message may be conveyed by a piece of sewing

sewing thread tied full of knots, and that twisted about a small parcel, sent to the confederate, as I shall shew hereafter; so likewise by musical notes, both which methods are mentioned by Bishop Wilkins; but then a master of music might contrive so to write by musical notes, that they shall not only convey the harmony, but the words also. Bishop Wilkins has given a small specimen of writing by musical notes; but the want of time, and harmony to them, would create suspicion, and that would soon produce a discovery.

THE manner of secret information by a knotted thread, or by marking a white thread with ink, I have carried on a correspondence with; and it is to be done by the following method, which I mention as the most simple, for it may be greatly improved.---Take two pieces of wood like a flat ruler, a foot or more long, and an inch broad, divide, from within about a quarter of an inch of each end, the ruler into twenty-four equal distances, and on

these write, as in the plate annexed the twenty-four letters; then fix two large pins in the hole which is to the left of *a*, and on the right of *z*, and tie a noose in the end of the string, and hitch it over the pin near *a*. Now, if you would signify,

Fly, we are no longer safe,

do it thus:—Bring the thread on from the right hand pin, and over the letter *f*, either tie a knot, or black it with ink; then mark a knot at *l*, and then at *y*; here the first word is taken without a return of the string, so continue to wind round the thread, and mark down the letters, 'till the sense is compleat. Your confederate must have a rule of the same length and division, and upon receiving the string, he winds off the letters, marking them down as his ruler picks them up; but if the knotted string be once suspected to convey any private intimation, a decypherer will find no difficulty in making out the sense it conveys, by reducing the knots into an alphabet of his own

own, by taking all the several distances between the knots, or other marks of distinction, or between a few of them, if the thread be long. This also is mentioned by Bishop *Wilkins*, and is to my certain knowledge practicable, as well as decypherable; for a gentleman of *Harwich*, a few years since, sent me a knotted thread, enclosed in a paper, without any key or clue, than letting me understand, it conveyed some sort of information; and and I soon discovered, it was to let me know, that one of the packets which go between that town and *Holland*, was cast away, upon the *Dutch* coast.

BISHOP *Wilkins*, in his secret and swift messenger, says, ‘It is very observable
 ‘ what *Vallesius* relates of *Pet. Pontius*,
 ‘ who, by an unheard of art, taught the
 ‘ deaf to speak; first teaching them to
 ‘ write the name of any thing he should
 ‘ point to, and afterwards provoking
 ‘ them to such motions of the tongue, as
 ‘ might answer the several words: and,
 ‘ it is probable,’ says the Bishop, ‘ that
 ‘ this invention, well followed, might
 ‘ be

' be of singular use, to those who stand in
 ' need of such helps, though certainly
 ' that was far beyond it (if true) which is
 ' related of an ancient *Doctor Gabriel*
 ' *Neale*, that he could understand every
 ' word, by the meer motion of the lips,
 ' without any utterance.' But it is im-
 possible that should be done, with any
 degree of certainty, for the VISIBLE mo-
 tion is often the same, in the uttering
 different letters and words, as *b* and *p*;
 pronounce, *mutton*, and *butter*, and you
 will find the lips have exactly the same
 motion; and that the difference in sound
 arises, from the breath passing through
 the nose, in the former, and through the
 lips in the latter; and *sound* is what no
 eye can perceive; and consequently, it is
 impossible, to teach one born deaf to
 speak, though they may be taught to
 write. I have seen a lady, who was born
 deaf, write down in her common place-
 book, upon the entrance of a grey eyed
 stranger, who visited the family,---
Puppies Eyes; and having mentioned the
 teaching a deaf person to read and write,
 it

it may not be improper to inform those, who by age or accident have lost their sight, how they may be able nevertheless to write very distinctly. Let any common joiner make a flat board, about fourteen inches long and twelve wide, in the middle of which let a place be sunk deep enough, when lined with cloth, to hold only, two or three sheets of fool's-cap paper, which must quite fill up the space; over this must be fixed a very thin false frame, which is to cover all but the paper, and fastened on by four little pins, fixed into the lower board: and across the lower frame, just over the paper, must be a little slider, an inch and a half broad, which must slip down into several recesses made in the upper frame, at proper distances for the lines, which should be near an inch asunder; and this ruler, on which the writer is to rest his fourth and little finger, must be made full of little notches, at a quarter of an inch distance from each other; and these notches will inform the writer, by his little finger dropping from notch, to notch,

notch, how to avoid, running one letter into another. When he comes to the end of the line, he must move his slider down to the next groove, which may easily be so contrived with a spring, to give warning, that it is properly removed to the second line, and so on. * I would not, by this hint, to instruct the blind to write, have it understood, that I mean to discredit Mr. *Pinchbeck's Nocturnal Remembrancer*, or that I took the hint from that *useful Toy*, having above twenty years ago, assisted a gentleman, then, and now living at *Southampton*, with such an *apparatus* for writing as described above. Nor would I have it supposed, that like the man who asking the use of spectacles, and on being told they were to read with, was surprised that he could not, by applying them to *his nose*, as others did, make out a single word, 'till the optician's amazement produced the following pertinent question, Whether he ever could read without spectacles?

* The writer must use a fountain pen.

CHAPTER III.

BISHOP WILKINS, in his chapter relative to a language consisting of tunes and musical notes, without any articulate sound, says, “ If the musical instrument that is used to this purpose, be able to express the ordinary notes, not only according to their different *tones*, but their *times* also, then may each letter of the alphabet be rendered by a single sound, whence it will follow, that a man may frame a language, consisting only of tunes, and such inarticulate sounds, as no letters can express, which kind of speech, is fancied to be usual amongst the lunar inhabitants; who, as *Domingo Gonsales hath discovered*, have contrived the letters of the alphabet upon the notes after some such order.” But the specimen the Bishop has given by writing GLORIA DEO SOLI by minums, on musical lines, will instantly appear to
any

any one, the least conversant with music; that being without harmony or time, it must have no meaning, or that some hidden matter is thereby disguised. I shall therefore endeavour to write down an alphabet by musical notes, in such a manner, that even a master of music shall not suspect it is to convey any meaning, but that which is obvious; and I am persuaded an alphabet of musical notes may be so contrived, that the notes shall not only convey the harmony, but the very words of the song, so that a music-master (which is too often his design) may instruct his female pupil, not only how to play upon an instrument, but how to play the fool at the same time, and impose upon her parents or guardians, by hearkening to his folly, impertinence, or wickedness. When a musick-master has once taught his female pupil to understand a musical alphabet, and she will permit him to carry on a secret correspondence, he may send her daily, a lesson which she may repent having learnt, as long as she lives.

IN

IN the plate annexed, I have given a musical alphabet, and under it a specimen to explain more fully my meaning. If a musick-master be required to play it, he will certainly think it an odd, as well as a very indifferent, composition; but neither he, or any other person, will suspect that the notes convey also the two following harmonious lines from Dr. Goldsmith's Poem, *The Deserted Village*.

“ Near yonder cops where once the garden smil'd,
“ And still where many a garden-flower grows wild.”

Now it may be so ordered, that the plain notes, i. e. the *crotchets* and *minims* alone, compose the alphabet, and that neither *flatts* nor *sharps*, nor the smaller notes between, (which may be placed as mere graces, and meant to deceive) have any thing to do with the reading; so that the Decypherer would not so readily know how to proceed, and many people there are, who will think it impossible to be made out without the key; yet I am persuaded,

suaded, one who possesses a very moderate turn for such business, would read it in a very short time.

If the words of a song, could be thus conveyed by the notes, as well as the air, it would, exclusive of the contrivance, be of infinite service and ease, to ladies who sing: indeed it seems, to those who are not acquainted with music, almost inconceivable, how a person at first sight, shall be able to read the bass and treble cliff, together with the words, and play two parts, and sing one, at the same time. It is certain that two musicians might, by a very little application, carry on a correspondence with their instruments: they are all in possession of the seven notes, which express a, b, c, d, e, f, g; and know by ear exactly, when either of those notes are *toned*; and they are only to settle a correspondence of tones, for the remaining part of the alphabet; and thus a little practice, might enable two fiddlers to carry on a correspondence, which would greatly astonish those who did not know
how

how the matter was conducted. Indeed this is no more, than what is called *dactylogy*, or *talking on the fingers*, which I have seen done, and understood as quick, and readily almost, as common conversation.

THOSE who are acquainted with Lord Bacon's great depth of capacity, will readily agree with me, that a secret method of writing contrived by a man of his amazing penetration, must be superior to all others, as indeed it is, and contains the highest degree of Cypher. I shall therefore lay before the reader his invention of writing.

OMNIA PER OMNIA.

FOR performing this, you must have a bi-literary alphabet, and a bi-formed alphabet; then write down the secret message on a paper a-part; you are to suppose that all the letters in the first alphabet express *a*, and those in the second *b*; to the interior letter, which Lord Bacon calls bi-literate, you shall fit a bi-formed exterior letter, which shall answer the other,
letter

letter for letter; and afterwards set it down. Let the exterior example be,

Ma-ne-re te vo-lo do-nec v-en-ero.

And the interior be,

F U G E.

Example.

F	U	G	E.
A a b a b	b a a b b	a a b b a	a a b a a
<i>Manere te volo donec venero.</i>			

Further Example.

All things do happen according to our desires the particulars you shall understand when we meet at the appointed time and place of which you must not fail by any means the success of our affairs does much depend upon the meeting that we have agreed upon.

Interior Letter.

Fly, for we are discover'd, I am forced to write this.

The above Example further illustrated.

A a b a b	a b a b a	b a b b a	a a b a b	a b b a b	b a a a a
F	L	Y	F	O	R
					b a b a a

babaa aabaa aaaaa baaaa aabaa aaabb
 W E A R E D
 abaaa baaab aaaba abbab baabb aabaa
 I S C O V E
 baaaa aaabb abaaa aaaaa ababb aabab
 R D I A M F
 abbab baaaa aaaba aabaa aaabb baaba
 O R C E D T
 abbab babaa baaaa abaaa baaba aabaa
 O W R I T E
 baaba aabbb abaaa baaab
 T H I S.

IN the above Cypher it is to be observed, that the *outward writing* must bear a quintuple proportion to the *inward*. Therefore to decypher the above, you must first find out whether two or three alphabets are used, and this will be discovered by the different kinds of letters which compose the outward writing; suppose one alphabet to be *a*, the other *b*, and the third *c*, then take out the three letters as if they only were inserted, and then it falls under the same method of decyphering it, as the first specimen I

D

have

have given, for it is nothing to the purpose, whether your suppositions and the writer's, be the same or not; for if you suppose always an *a* for his *b*, the operation will be equally the same.

I cannot here quit my Lord Bacon, without making one remark, which, though it is painful to reflect on, and indeed reflects a little on his memory, yet it is too true and striking a proof, of his not being above practising those arts, which most lawyers make use of. The above method of secret writing is certainly the most ingenious of any ever invented, and yet it was invented and published too, by that great man: what then must we think of him, who, when Attorney General, at the tryal of the Earl of Somerset, mentions this kind of secret writing as an aggravation of the Earl's crime, concerning the poisoning of Sir Thomas Overbury? where, speaking of the Earl's former intimacy with Sir Thomas, 'Nay, (says he) they were
'grown to such an inwardness, as they
'had

‘ had *Cyphers* and *Jargons* for the King and
 ‘ Queen, and all the great men ;’ things
 ‘ seldom used, but either by Princes and
 ‘ their Embassadors, and Ministers, or
 ‘ by such as work or practice against, or
 ‘ at least *upon*, Princes.’ But may it not
 be necessary, that every means, by which
 a secret correspondence can be carried on,
 should be published, provided there is at
 the same time a clue given, how to come
 at it ? For no man, however expert he
 may be in other matters, can readily set
 about reading a letter, written in Cypher,
 who has not previously considered the
 matter ; yet I must confess, most authors,
 who have writ upon this subject, except
 Bishop Wilkins (who was a very good
 man) have acknowledged, that the pub-
 lishing such an art, would be detrimental
 to the public. And *Trithemius* thought
 it necessary to make an apology for
 printing his six books of *Polygraphy* :
 but, on the other hand, let it be consi-
 dered, of what importance to a state it
 may be, to have more than ONE MAN

able, upon any urgent occasion, to read letters written in Cypher.

THERE were infinite pains taken, much time lost, and perhaps the life of a King too, for want of a ready decypherer of those letters writ by the Earl of Argyle, during the conspiracies carried on in Scotland; and yet one of those letters, of which a part is given above, and which occasioned so much pains and loss of time to unriddle, would *now* be reduced to the true sense, in a very few hours; not because men are now more wise, but because more men have of late considered the matter thoroughly. Indeed I am of opinion, that the son of a decypherer, even untaught, will more readily acquire his father's art, than the son of any other man, of equal abilities; and if this be true, no censure can justly fall on the Bishop of Bath and Wells, for procuring the reversion of his employment to his son.

THAT in general, the son of a musician, exclusive of the advantage he has
of

of an able master at hand, will learn to play on any instrument, at a younger age than other children, I have known many instances of. There is a professor of musick now living, who, when a very little boy, and not much bigger than the fiddle he played upon, astonished me so much, when I first heard him, that I could not help saying, I was certain his father was by profession a musician; --he was so; but I was at the same time assured, that he never took any pains to teach his son, and the boy, beside playing well on the fiddle, accompanied it by whistling through his teeth (a practice entirely his own) so that his *fiddle and whistle* together, was quite equal, to most fiddles accompanied with a tabor and pipe! and the genius of the offspring for the particual profession of the father, is not only to be observed amongst the human species, but in brutes also. I had once a Newfoundland dog, who having his early education on board of a man of war, was there taught to do

many things, which I will not venture here to relate, and only observe, that a puppy, which he produced even from a greyhound bitch, inherited many of his tricks untaught. Heretofore a criminal convict who could read and write, saved his life: but I apprehend the art is now too common, and that it occasions many to lose their lives, by having been taught writing, and reading, instead of ploughing, and sowing. Bishop Wilkins tells a pleasant story of a negro slave, who being sent with a letter and a basket of figs, and the slave's astonishment, when he found, that the letter *informed* the person to whom they were sent, that he had eat a part of them on the way; and who, upon a future occasion, hid the letter under a stone while he purloined the present, with no better success: and I have myself heard a negro say, with astonishment, That * *Becerara make pen, and pen make paper talk!* and this puts

* A white man.

me in mind of a smart reply, made by a little negro boy to his master, who, finding him a child of good parts, frequently conversed familiarly with him; but yet when he committed a fault, gave him a note to carry to the overseer of his plantation, directing therein, that he should be whipped. The boy perceiving the constant and fatal consequence of carrying a bit of paper to the overseer, took a favourable occasion to question his master about it; and why, when he carried a bit of paper, and at no other time, the overseer treated him with such severity? The master then informed him, that the paper *talked so*, and *so*, to the overseer, because he was idle, and neglected his work;-- why master, said he, I never see you work!---no, not with my hands, it is true, said the master; but I work with my head, which is much more laborious work than yours. So the next time the boy was sent with a paper to the overseer, he threw it away, and being asked by his master, what the overseer

said to him? Nothing, replied the boy, for I did not go to him, having this time worked with my head too. But to return to the matter of secret writing, and the art of disclosing it. Now having given the most difficult method, i. e. of Lord Bacon's writing *omnia per omnia*, I shall only briefly mention a few others, treated of by Bishop Wilkins, Falconer, Schottus, &c. many of which may be almost as soon read as written.

CHAPTER IV.

ONE very ingenious method which Schottus said he had from *Count Gonsfield* is, what would frustrate the method given of decyphering above. This is done by disposing the letters of the alphabet in a line or a circle, over which they place any number of figures in this manner:

4 3 6

abcdefghijklmnopqrstuvwxyz

You then write the secret intention on a paper, and over the top of the letters

ters place the number of figures agreed on, let the words be these :

The Governor of the city is beyond corruption, so that we may conclude there is nothing of bribery will serve the turn.

Which words, according to the example will stand thus :

436 43643643 64 364 3643 64

The Governor of the city is
364364 3643643643 64 3643 64 364
beyond corruption, so that we may
36436436 43643 64 3643643 64 364-
conclude, there is nothing of bri-
36436 4364 36436 436 4364.
bry will serve the turn.

OBSERVE what figure stands over the the first letter of the writing, viz. *T*, with the figure 4, then count forward as many letters, and write down the fourth, which from *t* will be *x*; then see what figure will be over the second letter *h*, which is figure 3; count forward from *h* three, and it will be *k*; then write down the sixth letter from *e*, and it will be *k* also; and so proceed, always ob-
serving,

serving, that the letters in the writing, are secretly communicative, to the figures above it, until you come to the end of the epistle, which will then stand thus :

Xkk kqahtfrt ti wnh eoxa ow dkbqsg
etvtasworp yr wndw bh ofb etqegyfk
xkkug ow ptxkoqui ti dxmdkvlk zlqo
vkvxk xkk xxxq.

To decypher this, transcribe the Cypher out of the epistle, keeping the lines and letters at such a distance, that you may place over each, a figure above it; then endeavour to find out the number of figures in the key, which must be enquired into by several suppositions. Suppose the number of figures to be three, then place them above the Cypher in this order.

1 2 3 1 2 3 1 2 3 1 2 3 1

x k k k q a h t f r t t i, &c. &c.

Now observe, where the same characters and the same figures happen to fall together, and you will find, that it expresseth the same power, as in the example, and that *k*, with the figure 3 placed over it, has the power of *e*, through the whole writing;

ing; and that x , with the figure 1 over it, signifies t ; but the same letter, when its figure is altered, cannot express the same power, for q , with 2, r , with 1, and t with 3, express severally, o , in the writing. Therefore, one and the same letter, will be expressed by *different* characters, so contrary to the first Cypher, laid down in the former part of this treatise; for here you will find, as in the first word of the above Cypher, that k not only stands for h , but e also, so that you may be certain when any character is double in a writing of this nature; different characters, are expressed by that letter. Having made these, and other general remarks, proceed to discover particular syllables or words, and having got one, you will soon find, with it, the true numbers that are contained in the key, or at least some of them, which will help you to the rest, observing, that in your several operations, you must count the letters backwards; since in general, the Cypher is written forwards; yet,

yet, as I have remarked above, both ways should be tried.

BISHOP WILKINS observes, that the *difference of characters* in the world, is part of the *general curse* upon their once *one tongue*; and from the same reason we may infer, that the *different methods* of writing those characters are so too.

THE Oriental languages are writ from the right hand to the left only; the *Ethiopic* and *Armenian* proceed as ours do, from the left to right, as well as Greek, Latin, French, Spanish, and German. At first the Greeks writ from the left hand to the right, and then from the right to the left, forward and backward as the ground is ploughed; so that an epistle so writ, might perplex a little, a specimen of which is given by Bishop Wilkins, thus:



T i l w e l d f r e
 h t l s f o o t e i
 e s e u h h u u f l
 p h n t a o t o h p
 e t c f l t t h a p
 f o r g l e h t n u
 t d e n n l e i d f
 i e a o o b f w f y
 l c f m t a i e p d
 e n e a b e e g e e

HERE the reader must begin at the first letter *t*, and take the letters down from the top to the bottom, and then go up the next row, and so on, and he will find the reading to be,

The pestilence doth still encrease amongst us; we shall not be able to hold out the siege without fresh and speedy supply. This is said to be the practice of the Chinese.

I have observed above, that a long letter writ in cypher is easier made out than a few words only, and this arises from the frequency of the vowels, and the repetition of the same words, therefore a sentence contrived wherein the fewest letters are employed, will be the most

most difficult to read, as the following specimen will evince, which is composed of only one third part of the alphabet, and writ according to *Cæsar's* method, taking the b for a, the c for b, and so on.

b c d e f g h i k l m n o p q r s t u v w x y z X
 a b c d e f g h i k l m n o p q r s t u v w x y z
 h, untke, he, h, dnwke, aws,
 h, dnwke, mns, boc, he, he, dnwke,
 mns, gnz, dnwke, h, h, dnwke,
 mns, xhsinwu, h, dnwke, dnwke,
 h, dnwke znw ?

THE reader will observe, that in the above cypher, there are two single characters together, as h, h, and that there is a repetition of a word of five letters d, n, w, k, e, *i. e.* the same word repeated twice together, yet if he will be at the pains to pick it out from the alphabet above, it will appear to be a jingle of words, which however is sense, if it be not good grammar.

I have seen a very ingenious method of secret information, which was by a letter delivered open to a person, who

was

was going abroad, and which appeared to him, as it would to every common reader, to be the warmest recommendation of the bearer to the writer's friend and correspondent that could be; yet, at the same time, the real intention of the writer was, to caution his friend against having any connection with him, as he was the most wicked and dangerous man he ever knew. The following letter will shew how the other was contrived, but is infinitely inferior, as it is, in many places, so lame, as to create suspicion; and suspicion alone is sufficient to produce the true meaning: but the other letter I have seen, had none of these imperfections, but was writ throughout, in an easy, familiar, and natural style.

THE paper being doubled in the middle, the real epistle is writ on the left hand side thus:

THE design is not
secret; there is now no
safety but by flight;
do not fail to meet me
half an hour hence;
let the next meeting be

just

just without the gate;
 (if my senses are found)
 we may conclude to have
 infallible evidence
 the snare is prepared
 effectually to entrap
 you and yours, &c.

P. S. Prithee ex-
 pose not thyself to
 imminent danger.

The manner of concealing it thus.

The design is not in danger to all it is as yet
 secret; there is now nothing in view to threaten our
 safety but by flight; we should ruin all our designs.
 do not fail to meet me by six in the old manner;
 in half an hour hence; I intend to be at the consult,
 let the next meeting be where they will, I'll have notice
 just without the gate; was the Governor this morning
 (if my senses are found) secure as we could wish him
 we may conclude to have hit right on the means and more
 infallible evidence not on this side conjunction,
 the snare is prepared they are misled and see that it is
 effectually to entrap them and on their ruin to raise
 you and yours, &c.

P. S. Prithee throw off those vain fears;
 expose not thyself to scorn when there is not any
 imminent danger.

THE

WRITING, in the above manner, was practised by the Roman Senators, and other great men among them, who being so frequently importuned to write in favor of those whom they knew nothing of, agreed amongst themselves, upon some secret intimation, that what they *writ*, and what they *meant*, were frequently very different. From this practice the proverb *De meliori nota commendare*, arose; and something like this, I think, is known amongst us at this day, as written *with*, or *without*, *Court favor*!

UPON the subject of secret information by signs, or gestures, without the help of words, or letters; I shall here insert what Lord Bacon says. It is certain, says he, that “ whatsoever may be
 “ distinguished into differences, sufficient
 “ for number, to express the variety of
 “ notions (so those differences be perceptible to sense) may be the convoy
 “ of the cogitation, from man to man;”

E and

and soon after he adds, NOTES therefore of things, which without the mediation of words (OR LETTERS) signify THINGS, are of two sorts; whereof the first is significant *ex congruo*, and the other *ad placitum*: and the same noble author, speaking of transitory signs of information, says, "As for gestures, they are, as it were, transitory *Hieroglyphics*; for as words pronounced vanish, writings remain; so *hieroglyphics*, expressed by gestures, are transient; but painted, permanent; as when *Periander* being consulted with how to preserve a tyranny, he bid the messenger stand still, and walking in his garden, *top'd all the highest flowers*;" the meaning of which was, the taking off the *heads* of most of the nobility and keeping the others low.

Schottus demonstrates how a man may, by using words that are insignificant to the confederates, guard those which are to be secret, from suspicion; which he clearly shews by the following example.

SUPPOSE

SUPPOSE the secret intention is to warn the confederates of danger, and to advise them to escape, and the words these,

Sumus in periculo; cavete

The harrangue thus :

In manu DEI sumus ubicunque versamur hanc ob causam NOS in rebus adversis nequaquam pusillanimes esse debemus; quoniam DEUS periculo omni eripere potest. Ergo AUDITORES cavete peccata & curam rerum vestrarum permittite DEO, &c.

OBSERVE here, that the words which express animate beings, hint to the Confederates, that they precede the words which are to convey the secret information, as DEI, NOS, DEUS, AUDITORES, and the words which follow them are *sumus in periculo; cavete.*

FALCONER gives a specimen of this method in English thus---

SUPPOSE the words to be communicated were

Fly, you are discovered.

THE discourse may be to this effect: let every MAN *fly* to his duty. GENTLEMEN you now see what PEOPLE *are*, and may do in their madness: but WE *discovered* long since their folly, &c.

THE words that point out the secret meaning are, MAN, GENTLEMAN, PEOPLE, WE; and taking the four words which immediately follow them, the confederates are told to fly, for they are discovered. Now the same method may be followed in carrying on a secret correspondence by musical notes, or by communicating the words of a song, by the same vehicle, which points out the time and harmony, and this may be done (without having any knowledge of musical compositions) but by any common piece of music whatever: to do this an alphabet must be formed as in the plate annexed; or in any other manner, for it may be contrived much better for the purpose: then take any piece of music (but such as is

com-

composed of the greatest variety of notes will be best) and copy it out upon ruled music paper, leaving one row of blank lines between; i. e. those lines on which the second or bass is usually writ. When you have copied the whole out, draw straight lines on the bass cliff, exactly under those, which divide the time in the trebble. Suppose you would write, *My time O ye muses, &c.* look for the note which is *m* in your alphabet, and then for *y*; now suppose there are eight or ten notes between the *m* and the *y*, then those are to be marked as *nulls* on the bass cliff, just under each note, by that mark, which in music imports a rest, which is this], and the confederate who has the key, knowing that the *rest-notes* are *nulls*, only makes use of those which are open, or which may be pointed out, by inserting other notes exactly under them in the bass cliff, and if the under notes, are placed three notes lower on the lines, than those in the trebble

are, they will in that case be in harmony, and the *rests* between, being in such an order, will prevent any suspicion, except to those who understand music; and yet even those who do, would hardly suspect that the notes of Lady Coventry's minuet, implied, as it might, an assignation in Grosvenor-square; or, instead of the rests being under the nulls, as they will of course be very frequent, they might be placed only under those notes which convey the reading, and then the bass cleff would appear as *busy* as the treble, and tend the more to perplex the decypherer, as he could not be sure, but both lines were employed to conceal the private writing: indeed where letters fall very distant from each other in the treble, it might be supplied, and frequently too, on the bass cleff, and signified by a dot, or some other musical character, placed near the treble note immediately above it.

A letter thus writ in Cypher, would
dis-

disconcert even a good Decypherer, and throw him out of the methodical way, of coming at the secret contents; indeed I rather think, it must be come at, more from ingenuity, than method.

THIS however is a hint only, how this kind of Cypher may be compleatly made use of, than a perfect method; but I am persuaded that a good composer of musick, would be able to write any common epistle, with the assistance of the trebble and bass cleff, so as to have very few *null-notes*; and the secret meaning instantly obtained by those who are in possession of the harmonic alphabet. Or, suppose every *crochet* or *minum*, which is to express a letter, is writ with the tail of the note downwards, and all the *nulls* upwards: this indeed might occasion some awkwardness in the appearance of the music, but it would not tend at all to a discovery, but still, what I think practicable is, that an *harmonic* alphabet may be so contrived by a good com-

composer of music, that every note shall be expressive of a letter, and convey the words of the song as perfectly to the eye, as they do the harmony to the ear. The composer of an harmonic alphabet, should be careful to include those notes, which are most frequently used, into his alphabet; and those, I think, are *on*, or between, the five ruled music lines; but he must carefully avoid having any of those notes already so well known to express *a*, *b*, *c*, *d*, *e*, *f*, *g*, keeping their proper place, for that would be the first consideration of an ingenious Decypherer. Now if this art of writing secretly by musical notes, was to be practiced, I question whether a Decypherer, to be expert in his art, must not only be a master of languages, but even a disciple of *Apollo*. However, according to the musical alphabet annexed, provided a letter is writ by it, and the *active* notes well corded between with *nulls*, upon the same lines, which

which might be known to be such, by the tail being turned up or down, or characterised by the mark for a beat, a shake, a trill, a pause, a flatt, or a sharp; it would be scarce possible for a Decypherer to make out, with certainty, the sense; and this method *unpublished*, would be least liable to suspicion; for who, that examined a suspected messenger, would think an old song, without words, in which perhaps the messenger's tobacco or snuff might be put, contained the secret he was to convey? nor could an ordinary messenger, either by bribes or threats, discover any thing more, than that the bearer was strictly charged to deliver that piece of music, into which he put his tobacco, to such a particular person.

It may seem at first, difficult to remember, what letters the notes imply, and I should have thought so too, had not the making out of the alphabet only impressed my mind, with the remembrance of every letter, and yet I cannot boast of having

a good memory ; but upon trying the experiment in my family, I find that it is attainable, by writing them down two or three times, without any further trouble : indeed to remember a name, or a word, it is best done by writing it down, though it be only with the finger, upon a table, without any mark ; as the having turned the form of the letters by the hand, will greatly assist the memory. Bishop Wilkins thinks it possible, that if inarticulate sounds can be contrived to express not only *letters* and *words*, but *THINGS* and *NOTIONS*, then there might be such a general language formed, as might be equally *speaking* by men of all nations, and so restore to us what *we lost*, by the second general curse, which is yet manifested unto us, *he says*, not only in the confusion of writing, but also in speech. But I am apprehensive this universal language may sleep quietly with the *flying chariot*, the same author, was once so busy in constructing.

If it be asked why men are not able, in these days, to decypher the Egyptian *Hieroglyphicks*, as well as other characters, it may be, that we are not sufficiently acquainted with the rites and mysteries of their religious worship. *Hieroglyphicks* signifies *sacred sculpture*; and this they carved upon pillars and pyramids, and painted them upon cottins, mummies, &c. so a King was expressed by a bee, who had the sweets to feast upon, and a sting to punish. A serpent with the tail in his mouth, represented the revolution of the year, by returning *into* itself: so when *Darius* was wearied out, in the war with the Scythians, they sent him a present of a bird, a mouse, a frog, and a bundle of arrows; intimating thereby, that 'till the Persians could fly like birds, or conceal themselves under the water like frogs, or live under the earth like mice, they could not escape the Scythian arrows. It was formerly esteemed amongst us, a matter of great ingenuity, to convey a remarkable

markable expression, or form a device, to express a man's name, by this method; and there are at this day, carved ornaments, in many of the old family seats, which were designed to convey the name of the original family, to future ages, and do so; as a Tun, with a bolt through it, for BOLTON; and *Issip*, by an *eye* and a *slip* of a tree; an Earl of *Arundel* decorated his house with a capital *A* in a *rundle*; and Mr. *Harebottle*, by a *Hare* on a *bottle*! But how far superior was the enamoured youth in the following device? Being violently in love with *Rose Hill*, he caused to be painted on the border of his cloath, a *rose*, an *hill*, an *eye*, a *loaf*, and a *well*, i. e. *Rose Hill I love well*. If therefore, the ancient Hieroglyphicks have no more ingenuity in them than the modern, we need not be over solicitous to understand them.

If we go back some hundred years for a specimen of our language, most men would require the assistance of a Decypherer

pherer to explain it, as the following specimen of the Lord's Prayer will evince.

Our Father which art in heaven
Uren Fader thic arth in heofnas
 thy kingdom be thy will so as in
ther ric sic thir villa sue is in
 heaven and in earth our .lose
heofnas and in earths uren hlof
 super-substantial give us to day and
ofer wistlic sel us to daeg and
 forgive us debts ours so we forgive
forgef us scylda urna sue we forgef an
 debts ours and do not leade us
scyldgum urum and ro inlead usith
 into temptation but deliver every one
in custnung ah gefrig urich
 from evil.
from isle. Amen.

NOR was the Lord's Prayer writ in much better English than the above, 'till *Richard* the Second's time. And here I cannot help reviving an English word, scarce known; and yet, it is one, which levied armies, and saved a kingdom.

WHEN

WHEN there was a dangerous rebellion against King *William Rufus*, and Rochester Castle stoutly maintained by the rebels, he issued out a proclamation, that those of his subjects who neglected to repair to his camp, should be reputed *Nidings*; and upon this they swarmed to him from all parts of the kingdom; and their numbers dismayed the rebels so much that they yielded; so that this one word (*Niding*) though now lost, saved a kingdom.

CHAPTER V.

IN the specimen given in the first plate, of secret writing, by the harmonic alphabet, it must be observed, that every note implies a letter also, and consequently under such a restraint, it can only have the appearance, and be the *picture of music, without* the harmony; yet it is such a picture as must pass unsuspected by all who do not understand music perfectly, and by
many

many who do; at least those who do, would most likely consider it only a wretched attempt to compose music, without suspecting that the notes conveyed two lines of true poetic harmony, from that sweet poem of Dr. Goldsmith's, *THE DESERTED VILLAGE*; and therefore this method is, in one respect, to be preferred to every other yet practised, of secret writing, i. e. that it is least liable to suspicion. An itinerant fiddler, or musician, with his *dogs-ear'd* music book in his pocket, might get admittance *into*, or from a town besieged, unsuspected. A tune might be pricked down in his book, among many others, and he might be desired to give a copy of it to any *particular person* where he is going, without suspecting the mischief, or good office, he is employed to execute, and consequently unable to betray the secret; and though suspicion should arise, how will the Decypherer know which, among a great number of musical airs, conceal the secret information? In this case a good Decypherer should

should be a good musician also, that he may pick out the most uncouth and constrained composition: for that would, most likely, prove to be the harmonic epistle. Therefore to obviate this, and to render the matter less liable to suspicion, and much more difficult to be decyphered, in the second plate, an air, composed of treble and bass, according to the rules of true composition, is given. In this plate, there are a great number of *null* notes to fill up, and to compleat the harmony. The confederate, who is in possession of the key and alphabet, will know the null notes by their tails being all turned *upwards*, and therefore he passes over them, and takes down in order, from the bass and treble cliff, those only which are turned *downwards*; a circumstance which would greatly perplex the Decypherer; first, to find out whether all the notes were active; secondly, whether the bass and treble cliff were both employed; and lastly, which were the *null* notes: yet this method is not without
some

some inconveniences, and such as would create suspicion or surprise in an examiner who understands music. For being confined to turn all the nulls one way, and the active notes the other, it must sometimes happen, that both must be occasionally constrained, and the tails frequently turned contrary to the usual practice in writing of music.

It is possible to render this method of writing still more secret, by placing a very thin bass under the treble, and to put rests, &c. under *some* of the active notes, and to point out the *others*, by a mixture or liquor (of which there are many) that would not appear 'till the paper is held to the fire, dipped in water, or fine dust thrown over it; and under all these impediments, it would be very difficult to come at the secret matter, yet it is what a good Decypherer would not, I believe, give up, as a thing not to be done.

WERE I, however, under a necessity to send a letter of the utmost importance, which was to pass through the hands, or

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under

under the inspection, of cautious examiners, I should think a good piece of harmonic composition, without any words annexed to it, the safest and most secret vehicle to convey it under. In letters, where it is necessary to be particular, as to the day, month, or even the hour, that may be done by a kind of short hand; for it would be very unsafe to write, though in Cypher, *Dear Sir*, at the top of a letter; or *your humble servant*, at the bottom; or even the month, the year, or the day of the month, as those words would be first examined by a Decypherer. To avoid any of these clues, therefore, where the month and the day is to be given, it may be conveyed, according to the Quakers' *bye way*. Let the twelve first music lines be considered to stand for the twelve months of the year, and then, counting from the first, to the thirty-first, the days of the month. If therefore I would date my letter the 8th day of April, a small dot on the fourth line preceding the first note, as in plate
the

the second, would imply the *fourth month*, and a little dash across the eighth line, in the same manner, would shew it to be dated the *eighth day* of the *fourth month*; and a little *x* from the first to the twelfth line, would imply any particular hour of the day; or an *o* the hour of the night.

It is very certain, that if such a sentence as the specimen in the second plate contains, can be conveyed by a few lines of music, a long letter may easily be framed, within the compass of an Italian air in score; nay, that *any* Italian piece of music of a tolerable length, may, by writing it with the tails properly turned up or down, according to the specimen here given, be made the vehicle of a letter, or a piece of important information; and still more easily might a good composer convey the words, and the harmony also, by the same characters. Conscious however of my own inability to execute a matter of so much ingenuity with any degree of success, I applied to Dr. A—e, and made him acquainted with my faint

idea of the business, and asked his assistance. But though the Doctor is undoubtedly an excellent composer of music, I more than suspect by his total silence ! that he has not the most distant idea, of what I thought I had laid before him in very plain *notes*. I am sure it was in very civil terms.

THE Doctor's silence, however, brings to my mind a question, a fellow traveller of mine, many years ago, put to a shepherd we met on Salisbury Plain. How often (said my fellow-traveller to the shepherd) honest friend, do you *vivify* a year ? The shepherd looked earnestly at him---smpered---scratched his head---and then, *stroaking his long chin*, without asking the meaning of the word, replied, *We do call it sheep-sheering* : for he was the best sheep-sheerer (as we afterwards heard) of all the pastoral swains upon that plain. If it be asked, why I applied to the father and not to the son, I answer, because he might have expected me, in return, to employ him to *teach* my daughter

daughter music, and I do not like his *manner*. Though this business did not *vivify* the ingenious Doctor, I am convinced that a good composer of music, either by framing the harmony by the alphabet, or the alphabet by the harmony, may not only render every note active, but by harmonic alphabets, might write two letters on different subjects, one in the treble cleff, and the other in the bass; and it is evident, therefore, by the specimen I have given, that the words of a song may be conveyed by the harmony; for any judicious singer, by dividing properly the words and repeating them, as is usual in singing songs, may sing those in due time, with the air which conveys them; and though I confess I see much harm might arise from it, yet it may be right to observe, by the bye, that an harmonic letter thus written, could not easily be brought *home* with any degree of certainty (especially where null notes are employed) so as to convict the writer in a court of justice; yet I cannot

think myself guilty of an injury to society, in pointing this method out, as it may be productive of much good, as well as of mischief; for secret writing is absolutely necessary on many important occasions of state. I will here give one striking instance of its utility. I will suppose, and I ought to suppose it, that the Queen of Denmark is a virtuous Princess; that a faction has been formed in Denmark, to dethrone her husband, and perhaps to deprive her of life, as well as of liberty; that no letter can possibly be conveyed to her, which has not been previously seen, and the contents carefully examined. I will suppose the King her husband, or the King her brother, desirous to assure her of their utmost protection, yet quite unable to convey such comfortable information to her. Now suppose the Queen to have been in possession of an harmonic alphabet, how easily, and with what propriety, could the King her brother, write her an affectionate letter, in common terms, and send her *a little*

music to divert her thoughts and employ her melancholy hours? I dare say in such a case neither the *Colonel of the Guard*, nor the Governor of the Castle of *Cronenbourg*, would have suspected that a few sheets, or a book of music, without any visible words, conveyed that unfortunate Princess such information as her Royal Brother wishes perhaps, at this minute, to send to her. For this *sweet music*, might call upon her, to support her spirits, and assure her, that a fleet should soon appear, and deliver her from her confinement. But suppose, that the music was even suspected to contain private information, and therefore not delivered, I believe I may venture to say, a fleet might sail from England to the Baltic Sea, before a *Danish Decypherer* had picked the intelligence out of an old song, *without words*; and then the most that could be made of it, would be, that some private information MIGHT be concealed in the music. But an intercepted letter written in evident Cypher, even while it remains undecyphered, carries

certainty

certainty with it, and puts every body concerned, as I said above, upon their guard. It therefore might be right for foreign Embassadors, or Princeesses, who are separated from their families, by foreign alliances, to be in possession of some kind of musical alphabet, by which they may write, or receive letters, which are not suspected to be so. The present mode, I believe, is, to do all this business, by what is obviously writing in Cypher; and that too, by some method which has long been in use, the key to which, I have *more* than reason to believe, most of the Princes in Europe are in possession of. I will hardly believe that the K— of —, for instance, is a stranger to every mode of *Cryptographical* writing by the several Princes and States in Europe. How often do we hear of a courier being murdered, and his dispatches carried off? and for what other purpose, but information? and without the key, to decypher letters so written, to what purpose should they be inter-

intercepted by such a deed? I have considered every method of secret writing, which I have heard of, either of ancient, or modern practice, and I submit it to the reader's consideration, whether writing by an harmonic alphabet is not, of all others, the most void of suspicion; perhaps I should say, *was not*; because having published it, the secret is divulged; but as *Bishop Wilkins's* swift messenger; and *Falconer's* art of secret information, are both very ingenious books on this subject, and have both been published many years, and yet are but little known, except by the very few, who have studied the art of writing in Cypher, I cannot suppose this performance of mine, in every respect so inferior, will ever be much known, and therefore it may prove useful to a few individuals of my own country, and never do mischief by finding its way into any other. And here it may be proper to acknowledge, that I have borrowed many of the subjects

jects I have treated of, from the two ingenious works above-mentioned, because they are very scarce books, being chiefly in private hands, and consequently are, what the booksellers call, *out of print*. I have observed elsewhere, that Bishop Wilkins just hints at the method of writing by musical notes, and he is the only writer, I believe, who ever mentioned this method; though I think I have somewhere read, that there was a people (but I doubt they were inhabitants of the moon) who conversed entirely by musical instruments; and I have several times wished, that were the case with us, when I have heard a parcel of men all talking together:—Harmony might then make one some amends.

DURING the writing of these sheets, an absent friend, who knew what I was about, sent me a letter written in cypher, but not considering the matter fully perhaps, thought that I should be startled at a letter, composed from the *Æthiopic* and *Etruscan* alphabets, and by way of rendering

rendering it *still more difficult*, every word is French, but which, according to auricular orthography, when read as English, seems to be so. This *Anglo-Franco* letter, which is set forth in the third plate, my ingenious correspondent, was well satisfied, could not be read, and continued in that belief 'till the return of the post, when she received an answer, written in her own alphabet; and though the deciphering of it, was done in less time than it was writ, and I am far from claiming any merit in reading it (as nothing of the kind can be more easy) yet the method being singular, I have thought it might entertain some readers, by inserting the letter, as well as the Cypher in which it was written. It is a strange mistake, that those who at first consider the matter of writing in Cypher, fancy it difficult, in proportion to the uncouthness of the characters, in which the letter is wrote; whereas the change of one letter, such as the Roman Generals made, is equally as obscure, and in some respects, to a young
beginner,

beginner, more so, than any other: but I must observe, that my female correspondent avoided giving me that light, which perhaps an alphabet of her own composition, would have yielded, for the reasons I have before mentioned, and therefore did well, in taking her characters from the *Æthiopic* and *Etruscan* alphabets, which she found ready formed to her hand.

I do not find one word in the following letter but what is to be found where I conclude they were taken from, i. e. from a French Dictionary. I began at first to exult at the (*If*) and the (*For*) but I found upon examination, that the former is the name of the *yew tree*, and the latter, the name of an Ecclesiastical Court in France.

Sur, as yeux air il, doux comme & change the climat: here, yeux mai have game, fiche, duc, fat mutin, foule porc, aile, port, fruit, & admirable menchette and butter; an mi sifre (a joli nymphe) tu chat tu yeux, & singe yeux an ode, tu the lute, or violin: yeux
canne

*canne have a stable for ure hors, an a place
for ure chaise. Mi son met a physician néer
the river, tisse a fatal signe! the sai, the
pour Docteur dos grive about the affaire,
oing tu the rude Squire:—but pardon mi
long lettre, pre doux comme tu us about mai,
if yeux canne: mi service tu ure niece:
hoüe dos Raffé doux? adieu mi friend*

* * * * *

*Pre doux comme for ure pour nenni seize
but feu beaux.*

THERE are several mistakes in the third plate which the engraver (*who is no decypherer*) has made, and which the reader, who will be at the trouble of examining it, is desired to excuse and to correct. The last letter of the first word on the third line is wrong, the character represents a *k*, and it should be a *c*; in the fifth line three characters are omitted, instead of the word *lute*, the *l* only is inserted; the last word of the fifth line (*canne*) has two *mm*'s, instead of two *nn*'s; the sixth word in the twelfth line begins with a *k*, instead of an *h*; and the
first

first character of the fifth word in the last line should be *s*, instead of an *e*. But such mistakes as these are very common, and such as a Decypherer will easily detect and correct, as he proceeds, in examining the Cypher; for when a few words are discovered, such as *that*, *the*, *them*, *there*, *those*, *and*, *are*, &c. &c. the mystery unfolds very fast, for if the characters to such words answer in general, there can be no doubt of being in possession of the compleat alphabet, in a short time; though the writer may have made a few literal errors, and therefore those who at first sight seem alarmed at the difficulty of making out my female friend's letter, are desired to consider it attentively for half an hour, and they will not then throw it down, and pronounce it an impossible, or even a difficult, task to accomplish, between their breakfast and dinner.

CHAPTER VI.

I Shall here add to the foregoing treatise, some of the many devices, stratagems, &c, by which secret information has been conveyed from one party to another, or from friend to friend.

MACHIAVEL, in the seventh book of the Art of War, says, "Some have written what they had to say, in the scabbard of a sword; others, have put their letters into paste, which they have baked, and given to the bearer for food upon the road, or concealed it under the collar of the messenger's dog; others, have sent letters about common business, and interlined them by writing with a composition, which will not appear 'till they have been dipped in water, or held to the fire:" And gives an instance, in his own time, of one, who having occasion to communicate a secret to some of his friends, who lived in a town which
was

was besieged, and not daring to trust the messenger with it, sent letters of excommunication, written in the usual style, but interlined, in the manner above, which being fixed to the doors of the churches, were soon taken down, and the contents of them perfectly understood, by those who knew from whom they came, by some particular marks.

A letter of common business may be interlined, by writing with *Sal Ammoniac* dissolved in water ; or with the juice of a lemon, these letters will not be visible 'till they are held by the fire, but a letter so written, will in a short time discover itself, from the corroding acid, and moisture of the liquid. So a letter written with dissolved allum, will not be discernable, 'till the paper be dipt in water.

LETTERS written with urine, goat's fat, or hog's lard, will not appear 'till dust is thrown upon them ; and it was by this stratagem, that *Attalus* obtained a victory over the *Gauls* ; for having appointed a day for sacrifice, he writ backwards

wards upon his hand, with goat's fat, *Regis victoria*; so pulling out the entrails of the sacrificed beasts, he pressed them to his hand, and as the priest turned them up and down in the dust, the words soon appeared legible, and this pious fraud encouraged his soldiers so much, that it gave him the victory.

A letter may be writ with the yolk of an egg, and when the letters are quite dry, the paper must be blacked all over with ink, and the confederate, by scraping the paper gently with a knife, will expose the letters written with the egg, while the rest of the paper continues black.

SCHOTTUS directs a letter to be writ with two inks, the secret one with common ink, made very faint, by mixing it with water, so that the writing will be scarce visible, and when it is dry, write an ordinary epistle over it, with ink made of gun-powder, beat, and mixed with rain-water, upon the first letters; and those, he says, will wash off, with a sponge dipt in galls, which will also blacken the first.

G

SCHOTTUS

SCHOTTUS also mentions an ingenious method of concealing a letter in a glass bottle, by taking the bladder of a hog, or a calf, and having blowed it full up, and being thoroughly dried, it is writ upon, then pressing out the air, put it into a bottle, leaving the neck of the bladder above the neck of the bottle, then fill it with oil and cork it up; and thus it will be so closely extended to all parts of the inside of the bottle, that neither the writing nor the bladder will be visible.

It is possible to open an egg at one end, and extract the contents; and put a letter within it, and fill up the hole neatly with another bit of egg shell.

FALCONER seems to think the *Lacedemonian Scytale* contrived by *Archimedes*, who lived about the year of the world 3755, to have been the most early, and the most universally practised; if it were so, it is evident, from the speedy manner of reading a letter so written, and which I have before pointed out, it is far from having any great ingenuity in the contrivance.

It

It is probable, the *Scytale* gave rise to a practice in the Greek Church, where the Priests at Divine Service held in their hands, A KONTAKION. This *Contacium* was a short staff, to which was made fast, and wrapped round, very long slips of parchment, consisting of a great number of pieces, on which were written, the prayers and offices to be performed by the Priests. A very curious one is now to be seen in the French King's library, adorned with accents and letters, or rather half letters, for it is a perfect *Scytale*.

To improve the *Lacedemonian Scytale*, dip a long thread in allum water, then roll it about a rod, or staff, in a serpentine revolution, and write upon it; but this also may be soon read, for the distance between the first and second mark of the ink, gives the circumference of the *Scytale*; and it is the same thing at which end of the thread you begin; for if you take the last letter instead of the first, turn the rod, and put that end down-

wards which was uppermost, and it will appear in order. *Baptista Porta* mentions the writing on the edges of books and on cards, as a method practised for secret purposes, by pulling back the leaves of a new bound book 'till the edges of the paper fall awry; and these leaves, when written upon, and returned to their proper position, appear only to have such specks of black, or red ink, as are often thrown upon books for ornament: to discover this, is only to suspect it; the cards indeed require more time, because the confederates may have agreed to the order in which they are to be placed; yet, by taking any one card, and looking out another which exactly tallies to it, you will soon find those which are to go before and follow, 'till they are all in their proper order.

AN epistle has been formed round a half dipt wax candle, and then covered over by fresh wax, and a verbal message sent, *that it would light him to his business*. In *Baker's Chronicle*, there is an account
of

of one *Frost*, who carried letters concealed in his walking staff, between the rebels in England and Scotland. Some have conveyed private intelligence written upon leaves of trees, and these leaves put on to cover ulcers on the messenger's legs, and even some have been engraven on the messenger's flesh, a practice as old as Ovid.

“ Caverit hoc custos, pro chartâ conscia tergum
 “ Præbeat, inque suo corpore verba ferat.

And long before Ovid's time, *Histiætus*, the tyrant of *Miletus*, shaved the head of one of his servants, as an effectual method of *curing his sore eyes*, and writ his secret intention upon his head; then letting his hair grow, sent him to the Persian General, under pretence of perfecting his recovery, directed him, when he came to *Aristagoras*, in *Greece*, to tell him, that it was his request the General would shave his head with his own hands, as he had done; and thereby the messenger's head delivered a secret which never troubled his brain.

THERE

THERE are an infinite number of these kind of devices mentioned by *Baptista Porta*, *Schottus*, *Bishop Wilkins*, *Falconer*, and many others; but they, like those I have given above, are trifling, and only to be read for amusement rather than practice, and therefore I forbear reciting more of them.

THE method by which the private information was given, in the letter of excommunication, was probably this.

THE confidants at parting frame an alphabet of figures to write by thus:

A	b	c	d	e	f	g	h	i	k	l	m
4	22	10	9	1	11	13	18	3	19	12	8
n	o	p	q	r	s	t	u	w	x	y	z
20	2	21	23	7	6	5	15	14	16	17	24

NOW having writ down the secret matter on a paper, they contrive a letter of common business in any language, they look out the numbers of the alphabet that express the letters of the secret writing, and counting the letters in the common missive from the beginning, they add some private mark under every cha-

character, of the respective numbers.

Let the secret intimation be,

3 6 18 4 12 12 6 1 1 16 2 15 5 18 3 6
 I f h a l l s e e y o u t h i s
 20 3 13 18 5 4 5 16 2 15 7 12 2 9 13
 n i g h t a t y o u r l o d g
 3 20 13 6.
 i n g s.

The epistle thus:

HAVING understood that I could not be safe any longer where you are, I have chosen rather a voluntary banishment, to wander with my liberty abroad, than to lie under the daily hazard of losing it at home. 'Tis in my opinion the least of the two evils: 'tis true, I am innocent, but innocence is not always a buckler, so that I hope you will not condemn, even though you cannot approve, my choice; at least 'till you have the particulars of my case, which expect per next.

OBSERVE, the figure for the first letter, to be put in Cypher, is 3; therefore a secret point or dot must be placed immediately under or over it, *i. e.* under *u*;

and

and number 6 expressing the second letter, a dot must also be placed under *n*; *n*, being the sixth letter from *v*; and eighteen letters from *n*, will stand another dot, and so on; in this manner.

HAVING understood that I could not be safe any longer where you are, I have chosen rather a voluntary banishment, to wander with my liberty abroad, than to lie under the daily hazard of losing it at home: 'tis in my opinion the least of the two evils. 'Tis true I am innocent, but innocence is not always a buckler; so that I hope you will not condemn, even tho' you cannot approve, my choice, at least 'till you have the particulars of my case, which expect per next.

THE points may be so made as not to be visible 'till held to the fire, or dipt in water.

To

To decypher this, you must take down the number of letters from the beginning of the epistle to the first point, from that to the second, and so on, from point to point, to the last; and then it becomes the same as a plain cypher, and is decypherable in the same manner, as mentioned in the preceding chapters, for by making a different character, to represent every different distance you find between the dots, you will have the same variety of characters (and it is no matter what) as there are variety of letters used in the secret information: for instance, suppose you represent the 5th dot by a †, you will find, by counting the number of letters or *nulls* between that, and the next dot, to be twelve; and as there is just the same number, between the fourth dot and the fifth, as there is between the fifth and the sixth, you will find that also must be a †, and though this does not directly inform you what letter the † is to express, yet you are certain it is some word, where two and the same letters are conjoined,
and

and this is a great help towards coming at the rest; and here I shall finish this enquiry, having said enough, and more than is necessary, to lead those who have leisure and inclination to pursue this study, into the road at least, which will convey them to their journey's end; and only observe, that though my own method of secret writing, by the *Harmonic Alphabet*, may have less ingenuity than any of the others, which are recited above, yet it certainly has, or at least had, *before the publication*, one advantage of most of them; namely, that of being the least liable to suspicion.

BUT before I conclude, I cannot help mentioning a laughable experiment insisted upon by some, of bottling, as it were, up words in a tube, or trunk, one end of which being quite closed up, so that no air can enter, the words are to be conveyed by the mouth into the other, and then instantly corked and secured from taking *harm* by the air; and thus the tube may be conveyed an hundred miles, or
more,

more, to the hands of the confederate, who, upon uncorking the *contrary* end of the tube, that the words *were put in at*, lets them out in due order. But this is to be done only, in that country, where the intense cold freezes up the words of the speaker, which are never heard by any, 'till the following thaw hatches them into sound.

BUT though articulate sounds cannot be thus arrested, yet there are several ways of directing and conveying sounds to a very considerable distance. The Emperor *Severus*, fortified the North of England, by a wall extending from *Carlisle* to the *Tine*, at every mile distance there were towers, and between the towers watch-houses, at a convenient distance, from which pipes of brass were concealed in the curtain of the wall, so that in a very short time, the troops stationed in the several towers, had notice when the enemy approached.

Albertus Magnus spent thirty years in framing a speaking statue, which *Aquinas* wilfully

wilfully broke, and rendered *speechless*. But this could contribute nothing to secret information, and was only to be admired for the mechanism of its parts.

It is needless almost to mention *Tachygraphy*, or short-hand writing, as it hardly comes under the denomination of secret writing, for where notes are used to express syllables, and sometimes words, he who understands *one kind*, of short hand, may read any, for you may judge of syllables, when expressed by single characters, by their frequency, &c. as of letters, and beside this, you have the advantage of distinguishing the vowels, which are not expressed, but understood, by the places of the notes, (that together with their own proper *powers*) express those of the several vowels. Among the Romans *A* was the mark for *absolution*; *c* of *condemnation*; *N. L.* *Non Liqueat*; and *N. D.* *Neci datum*. And their Judges writ their several opinions upon a *Tessera*, in capital cases; hence it was that *A* was called
Salutis

Salutis Litera, and *C Litera Triftis*. But their *Notaries* encreased the number of abbreviations to such a degree, for the sake of dispatch, that at length it occasioned so much confusion, that *Justinian* discarded the use of them, though *we* have retained that custom from them down to this day in the *A. D.* for the year of Christ; and indeed the knowledge of the ancient abbreviation, is very necessary, in order to understand the religious worship, as well as the civil laws, of the ancient Romans, as they generally consecrated *places*, or things, by the first letter of the words, then well understood, such as *Mer. S.* for *Mercurio Sacrum*; *M. I. Maximo Jovi*; *D. Im. S. Diis Immortalibus Sacrum*; *D. P. Dies Penatiorum*; *D. O. Diis Omnibus*; *I. O. M. D. Jovi Optimo Maximo Dedicatum*, &c.

SINCE the above sheets have been printed off, I have had an opportunity to be convinced, that a person born deaf may, at a proper age, being otherwise of good

good parts, not only be taught to read, to write, to make known his wants, and to communicate his ideas, but that it may be done, in almost as short a time, as a child can be taught, who does not want the sense of hearing: indeed it was the observations I had made on the quick parts, and ready perceptions, of a faithful servant, now living in Lord Bateman's family, who was born under this defect (for he is too happy to call it a misfortune) which first led me to consider that matter, and *that* led me into the other subjects I have here treated upon; but I am told there is a very ingenious book, which however I cannot procure, written by a *Dr. Watts*, upon this last subject, wherein he gives the necessary instructions to teach the deaf to read and to write.

The CONCLUSION.

A Decypherer, before he sets about his business, should endeavour to know from what part of the world the in-

intercepted letter in Cypher came, and from that circumstance, consider what language the cypher is most likely to be wrote in, as that may save him much pains, time, and study. He must consider also that the Oriental Languages, as *Hebrew, Chaldaic, Syriac, Samaritan, Coptic, Persian, Arabic, &c.* are writ from the right to the left, and that only the *Armenian* and *Ethiopic* are from the left to the right.

ON the contrary, all the occidental languages, as *Latin, Greek, Spanish, French, German, Italian, Sclavonic, and English*, are writ from the left hand to the right. At first the Greeks writ from the left to the right, and back again, from the right to the left, as land is ploughed. Hence *literas exarare*, signifies to write, a metaphor taken from the manner of ploughing the ground. Nevertheless it must be confessed that two ingenious men, who are to be separated from each other, may previously agree, upon some method, whereby they may
cor-

correspond by letter, in a manner that is scarce possible to be disclosed without the key; and I shall instance one: Suppose the parties agree to correspond by Newton's first edition of Milton, or any other books, and thereby direct each other in their letters, to such a page, such a line, and to such a word; who, I say, would be able to find out by their writing page 7, line 2d, words three, four, and five; 2 vol. page 8, line 19, word 4; same page line 9; words 3, 4, and 5; was to say that THE WESTERN EMPIRE IS DEGENERATED INTO LICENTIOUSNESS? without being told, that these words will be found, in the first and second volume of Farneworth's translation of Machiavel's Works, the first three words, from his history of Florence, and the remainder, from his political discourses of the first Decad of Livy.

F I N I S.

QUOITCA COTTAGE,
Monmouthshire, 1772.



The Harmonic Alphabet.



$0\Delta, \boxplus = 44, \boxplus 2 =, 4311 = 8 C:\textcircled{O},$
 $0\Delta\Delta 1, 4\Delta 81, 5 - C:\textcircled{O}\Delta 8; 3, 1 - \diamond \boxplus,$
 $8 = 939 \boxplus, \boxplus 2 = 38, 265 \times 4 -,$
 $68 - C:\textcircled{O} = 8.$



Lento

n ll th a t o f l

ov e c a n b e

e x p r e f e d

i n t h e f

e f o f t n u m b e

r s f

e e

2: H, 22, 32: 2, 20 H, 0 6, 2 3: 2, + 3 + 2, 2
V2 H2, 32: 2, + 20, 20: 2, 20 + 2, 20 + 2, 20 + 2,
2 3 H 20, 20 6 2, 2 3 H 20, 20 H: 20, 20, 20
A: 20 H: 20 + 20, 20 20 H 2, 20 2 6 20, 20
20, 20 20 2, 32: 2, 20, 2 2, 20: 20 2 6,
20: 2, 20 20 A 6 2, 2 3 H, 20 H, 20 20
+ 20 20 2, 20, 2 20, 20 20 20 20 20 20
20 20 2, 20 20 6, 20 20 2, 20 2, 20
2 2, 20 H 2: 2, 20 2: 20, 20 2, 20 20 20 20
H: 2, 20 20 H 2: 20, 20 20 2 2
20 2, 2 3: 2, + 3 + 2, 20: 2, 20
+ 20, 20 H: 20 2, 20, 20 H, 20 20 2,
2 3: 2, 20 20, 20, 20 H 20 20 2;
2 3 H, 20 H, 2 3: 20, 20 20 20, 20

ተጽ, ሣ, ተህጋወላጅ, ስህጽ, ተቀብተን,
ተህጽ, ጸ፡ተ, ሞን ተ፡ከሰወ, ሞ፡፣ ፊ, ጽ,
ሣ, ጋ ጸተበዘጋፊጽ, ተጋወተህጽከከጽ, ሣ,
ቀባ, ወ፤ ተሰህጽ, ስ፡, ተህጋከ, ስ፡, ፤ጽ፡ጊ;
ጽፍ, ጸ, ፡በፋቀባወ, ፤ጽ፡ጊ, ተተጽ,
ህጸከጽ, ጋወ, ጋ ሰቀጋተጽ, ሞ፡፣ ፊ, ፡ከጽ,
ጸብተበጽወ, ወበጽከ, ስህጽ, ከበ፡ጽከ,
ጽ, ጸጋበጽ, ስህጽ, ሰ፡፣ ፊ, ጸ፡፣ ጸተከጽ፡ከ,
ሞሞጋከጽ, ጸበወላ, ስ፡, ስህጽ,
ከ ጸፋወ, ተበ, ቀፋወላ, ቀጽከከከጽ,
ጋ ለፋ፡ከ, ተጋባ, በሞ, ፤ጽ፡ጊ, ተጋወወጽ;
ተጽ, ወፋ፡ጽ ጸፋጽ, ከጋሞሞጽ
ጸ፡ ሰከጽ, ጸ፡፣ ጊ, ተፋተጽ,
ጽጽበጽጽ, ለ፡ከ, ሞ፡፣ ለጽጋ፡ጊ፡